REMARKS

In view of the following remarks, Applicant respectfully requests

reconsideration and allowance of the subject application. This amendment is

believed to be fully responsive to all issues raised in the Office Action mailed

5   February 15, 2005.

I. Rejections Under 35 U.S.C. §102

In the final Office Action mailed February 15, 2005, claims 1-6 and 12-

18 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S.

10   Patent No. 6,085,333 to DeKoning, et al. (the '333 patent). Claims 7-10

were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent

No. 6,681,339 to McKean, et al. (the '339 patent). Applicants traverse these

rejections.

A. Legal Standard

15   The standard for to support a rejection for anticipation under

35 U.S.C. §102 is one of strict identity. To anticipate a patent claim, a single

prior art document must contain all the essential elements of the claim.

Hybritech, Inc. v. Monoclonal Antibodies, Inc., 231 USPQ 81, 90 (Fed. Cir.

1986). Every element of the claimed invention must be literally present,

20   arranged as in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913,

1920 (Fed. Cir. 1989). "The identical invention must be shown in as

complete detail as is contained in the patent claim." MPEP §2131 (7th Ed.

1998) (citing *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed.

Cir. 1989)). Furthermore, functional language, preambles, and language in

Caven & Aghevli LLC

3

2003023532-1

"whereby," "thereby," and "adapted to" clauses cannot be disregarded. *Pac-Tec, Inc. v. Amerace Corp.*, 14 USPQ2d 1871 (Fed. Cir. 1990).

The burden of establishing a *prima facie* case of anticipation resides with the Patent and Trademark Office." *Ex parte Skinner*, 2 USPQ2d 1788,

5   1788-1789 (Bd. Pat. Int. 1986) (holding that examiner failed to establish *prima facie* case of anticipation). The examiner has "the burden of proof . . . to produce the factual basis for its rejection of an application under sections 102 or 103." *In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984) (quoting *In re Warner*, 379 F.2d 1011, 1016, 154 USPQ 173, 177

10   (CCPA 1967)). Only if that burden is met, does the burden of going forward shift to the applicant.

B. The '333 Patent Fails to Disclose Elements Recited in Claim 1

Independent claim 1 recites limitations neither disclosed nor

15   suggested by the '333 patent. By way of example, and not limitation, independent claim 1 recites a limitation directed to:

> wherein the primary memory in the first NSC and the mirror memory in the second NSC are allocated in corresponding blocks.

20   The Action cites column 8, lines 7-9 to support the rejection. The cited text reads as follows:

> The secondary cache area in cache 116.1 116.2 is assigned the same corresponding memory addresses as in the primary cache area.

25   The cited text pertains only to memory address assignment; it is utterly silent regarding the *allocation* of memory blocks.

The Action further cites column 9, lines 7-19 to support the rejection.

The cited text reads as follows:

5

10

15

On receipt of the message from the native controller 118.1, the spare controller 118.2 allocates space within its RPA memory 113.2 for the image of the native controller's 118.1 operating code. Mirroring capability is provided through intercontroller connections. RPA memory 113.1 is connected to shared bus 156 via bus 152.1. Similarly, RPA memory 113.2 is connected to shared bus 156 via bus 152.2. The native controller uses mirroring techniques to transfer 270 the image to RPA memory 113.2. The present invention utilizes co-processor 115.1 to provide communications and coordination for the transfer of data between the native controller's RPA memory 113.1 to the spare controllers RPA memory 113.2 without assistance of the CPU 112.1.

Applicant notes that this cited text relates to memory allocation in the Raid Parity Assist (RPA) cache 113; it does not relate to management of primary and secondary cache 116. Further, this cited text describes nothing

20 more than conventional mirroring techniques; it fails to disclose (or even to suggest) allocating primary and secondary memory in corresponding blocks.

In the Response to Arguments in the final Action the Examiner appears to equate memory address assignment with memory block allocation. This equation is technically erroneous. Memory *allocation* refers

25 to the process of assigning blocks of memory on request. By contrast, memory *addressing* refers to the process of establishing and maintaining one or more logical structures that ultimately map to a physical location in memory. The definition presented in the final Action appears to be relevant only to memory address assignment; it is unrelated to memory block

30 allocation.

Caven & Aghevli LLC

5

2003023532-1

Memory allocation and memory addressing are two distinct technical

concepts. The cited text of the '333 patent relates only to memory

addressing; it does not relate to memory *allocation*. Therefore, the '333

patent cannot anticipate independent claim 1.

5

C. The '333 Patent Fails to Disclose Elements Recited in Claim 3

Dependent claim 3 recites limitations neither disclosed nor suggested

by the '333 patent. By way of example, and not limitation, dependent claim 3

recites a limitation directed to:

10
    wherein command-response data is transmitted
    between the first NSC and the second NSC in one or more
    named resources.

The Action cites column 5, lines 62-64 to support the rejection. The

paragraph including the cited text reads as follows:

15
    RDAC 118.1 includes main CPU 112.1, flash memory
    114.3 and program memory 114.1 for storing program
    instructions and variables for the operation of CPU 112.1, local
    memory 116.1 (also referred to as cache memory) for storing
    data and control information related to the data stored in disk
20 array 108, RAID Parity Assist (RPA) 113.1 memory, and co-
    processor 115.1 for controlling the transfer of data to and from
    the disk drives 110.

The cited text neither discloses nor suggests transmitting command-

25 response data between a first NSC and a second NSC in a named resource,

as recited in claim 3. Therefore, the '333 patent cannot anticipate claim 3.

Caven & Aghevli LLC   6   *2003023532-1*

D. The '333 Patent Fails to Disclose Elements Recited in Claim 6

Dependent claim 6 recites limitations neither disclosed nor suggested

by the '333 patent. By way of example, and not limitation, claim 6 recites a

limitation that:

5   the NSCs reserve positions for command-response data
in the data flow on the point-to-point communication link.

The Action cites column 7, lines 19-30 to support the rejection. The

cited text reads as follows:

10   The RAID disk array management software is operating
RDAC software, that is, the disk array management software
within the RDAC node 162.2. The RDAC node receives host
I/O requests for the disk array subsystem 100 and can reroute
host I/O requests if controller 170.1 or 170.2 fail. If controller
170.1 or 170.2 fail, host I/O requests to the disk array
15   subsystem may be rerouted through the UNIX system device
nodes 161, however, these I/O requests will be lost because
the RDAC software 162.2 doe not have any knowledge of
these rerouted host I/O requests. In the present invention, the
device driver interface 164 is the logical interface between the
20   host computer 120 and the bus 150 and accepts high-level
commands from the host computer 120 such as read sector or
write sector.

The cited text neither discloses nor suggests the NSCs reserve

25   positions for command-response data in the data flow on the point-to-point

communication link, as recited in claim 6. Therefore, the '333 patent cannot

anticipate claim 6.

Caven & Aghevli LLC   7

2003023532-1

E. The '333 Patent Fails to Disclose Elements Recited in Claim 12

Dependent claim 12 recites limitations neither disclosed nor

suggested by the '333 patent. By way of example, and not limitation, claim

12 recites a limitation that:

5   the first NSC and the second NSC communicate over
the point-to-point communication link using SCSI tunneling
techniques.

SCSI tunneling is explained in detail in the specification, at least at

10   pages 23-24. The Action cites column 7, lines 19-30 to support the rejection.

The cited text reads as follows:

          The RDAC node receives host I/O requests for the disk
array subsystem 100 and can reroute host I/O requests if
controller 170.1 or 170.2 fail. If controller 170.1 or 170.2 fail,
15   host I/O requests to the disk array subsystem may be rerouted
through the UNIX system device nodes 161, however, these
I/O requests will be lost because the RDAC software 162.2 doe
not have any knowledge of these rerouted host I/O requests. In
the present invention, the device driver interface 164 is the
20   logical interface between the host computer 120 and the bus
150 and accepts high-level commands from the host computer
120 such as read sector or write sector.

The cited text neither discloses nor suggests that the first NSC and

25   the second NSC communicate over the point-to-point communication link

using SCSI tunneling techniques, as recited in claim 12. Therefore, the '333

patent cannot anticipate claim 12.

Caven & Aghevli LLC   8

2003023532-1

F. The '333 Patent Fails to Disclose Elements Recited in Claims 13

and 15

Dependent claims 13 and 15 recite limitations neither disclosed nor

suggested by the '333 patent. By way of example, and not limitation, claim

5   13 recites a limitation that:

> during a data transfer from the first NSC to the second
> NSC, the first NSC is configured to identify a memory buffer in
> the second NSC into which data is to be received by the
> second NSC.

10   Claim 15 recites a limitation that:

> during a data transfer from the second NSC to the first
> NSC, the second NSC is configured to identify a memory buffer
> in the first NSC into which data is to be received by the second
> NSC.

15

The Action cites column 9, lines 33-35 to support the rejection of

these claims. The cited text reads as follows:

> Once mirroring is complete and as part of its
> housekeeping duties, the native controller frees the buffers in
20 > its RPA memory 113.1 containing the image of its operating
> code.

.The cited text neither discloses nor suggests that during a data

transfer from the first NSC to the second NSC, the first NSC is configured to

25   identify a memory buffer in the second NSC into which data is to be received

by the second NSC, as recited in claim 13. Further, the cited text neither

discloses nor suggests that during a data transfer from the second NSC to

the first NSC, the second NSC is configured to identify a memory buffer in

the first NSC into which data is to be received by the second NSC, as recited

30   in claim 15. Therefore, the '333 patent cannot anticipate claim 13 or claim

15.

Caven & Aghevli LLC   9

2003023532-1

G. The '333 Patent Fails to Disclose Elements Recited in Claims 14

and 16

Dependent claims 14 and 16 recite limitations neither disclosed nor

5   suggested by the '333 patent. By way of example, and not limitation, claim

14 recites a limitation that:

> during a data transfer from the first NSC to the second
> NSC, the second NSC is configured to implement an atomic
> write of data received from the first NSC.

10   Claim 16 recites a limitation that:

> during a data transfer from the second NSC to the first
> NSC, the first NSC is configured to implement an atomic write
> of data received from the second NSC.

15   The Action cites column 3, lines 20-31 to support the rejection of

these claims. The cited text reads as follows:

> The native controller creates an image of its operating
> code including configuration parameters, and copies this
> "synch info" into a reserved area of its cache memory. An
20   > ordinary person skilled in the art will recognize it is equally
> feasible to store the copy of the native controller's software and
> configuration parameters in statically or dynamically allocated
> portion of a disk drive to pass this information between
> controllers. The native controller then utilizes mirroring routines
25   > to transfer the image to the spare controller. If the synch info is
> successfully transferred, the spare controller will begin to
> execute the mirrored operating code within its cache..

Caven & Aghevli LLC   10

                                                              2003023532-1

The cited text neither discloses nor suggests that during a data transfer from the first NSC to the second NSC, the second NSC is configured to implement an atomic write of data received from the first NSC, as recited in claim 14. Further, the cited text neither discloses nor suggests

5   that during a data transfer from the second NSC to the first NSC, the first NSC is configured to implement an atomic write of data received from the second NSC, as recited in claim 16. Therefore, the '333 patent cannot anticipate claim 14 or claim 16.

10   *H. The Rejections of Claims 17 and 18 are Improper*

Dependent claims 17 and 18 each depend from independent claim 7, which stands rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,681,339 to McKean, et al. (the '339 patent). The final Action cites the '333 patent in rejecting claims 17 and 18. Hence, claims 17 and 18

15   stand rejected under 35 U.S.C. §102 as being anticipated by a combination of references. This rejection is improper as a matter of law and must be withdrawn.

Caven & Aghevli LLC   **11**

                                                                            2003023532-1

I. The '339 Patent Fails to Disclose Elements Recited in Claim 7

Independent claim 7 recites limitations neither disclosed nor

suggested by the '339 patent. By way of example, and not limitation,

independent claim 1 recites a limitation directed to:

5   transmitting the data to a corresponding block of cache memory in a mirror NSC.

The Action cites column 4, lines 34-38 to support the rejection. The

cited text reads as follows:

10   Next, the primary controller 116 mirrors the data to controller B (alternate controller) 118, such that the alternate controller 118 copies the data into an alternate controller cache memory 122, thereby providing a backup copy of the primary controller 116 data in case of a controller failure.

The cited text of the '339 patent pertains only data mirroring; it is

15 utterly silent regarding the transmitting data to a *corresponding* block of

cache data in a mirror NSC. Therefore, the '339 patent cannot anticipate

independent claim 7.

Caven & Aghevli LLC

12

2003023532-1

J. The '339 Patent Fails to Disclose Elements Recited in Claim 9

Dependent claim 9 recites limitations neither disclosed nor suggested

by the '339 patent. By way of example, and not limitation, claim 9 recites a

limitation that:

5
> allocating a block of cache memory in the primary NSC
> automatically allocates a corresponding block of cache
> memory in the mirror NSC.

The Action cites column 4, lines 34-38 to support the rejection. The

10   cited text reads as follows:

> The primary controller 116 caches the data into the
> primary controller 116 cache memory 120. Next, the primary
> controller 116 mirrors the data to Controller B (alternate
> controller) 118, such that the alternate controller 118 copies the
15   > data into an alternate controller cache memory 122, thereby
> providing a backup copy of the primary controllers 116 data in
> case of a controller failure.

The cited text neither discloses nor suggests that allocating a block of

20   cache memory in the primary NSC automatically allocates a corresponding

block of cache memory in the mirror NSC, as recited in claim 9. Therefore,

the '339 patent cannot anticipate claim 9.

K. The '339 Patent Fails to Disclose Elements Recited in Claim 10

Dependent claim 10 recites limitations neither disclosed nor

suggested by the '339 patent. By way of example, and not limitation, claim

10 recites a limitation that:

5   transmitting the data to a corresponding block of cache
                        memory in a mirror NSC implements an atomic write process.

The Action cites column 4, lines 47-49 to support the rejection. The

cited text reads as follows:

10   .   The mirror area 176 is used to store a backup copy of
                        cache line data (backup data) mirrored from a partner
                        controller. The mirror area 176 is provided to allow a survivor
                        controller to take over the tasks and cache line data of a failed
                        controller.

15

The cited text neither discloses nor suggests that transmitting the data

to a corresponding block of cache memory in a mirror NSC implements an

atomic write process, as recited in claim 10.   Therefore, the '339 patent

cannot anticipate claim 10.

20

Caven & Aghevli LLC   14

                                                                    2003023532-1

II. Rejections Under 35 U.S.C. §103

Claim 11 was rejected under 35 U.S.C. §103(a) as being obvious over the '339 patent in view of U.S. Patent No.6,385,706 to Ofek et al. (hereinafter, "the '706 patent"). Applicants traverse this rejection.

5   As noted above, independent claim 7 recites limitations neither disclosed nor suggested by the '339 patent. The Action asserts that the '706 patent discloses transmitting context information with the data, as recited in claim 11. Applicants disagree. Action cites column 23, lines 12-35 to support the rejection. The cited text reads as follows:

10   In the event that the metadata is being stored as shown at table 134 of FIG. 13, then the metadata may be updated after the applicable backup segment has been copied into the medium holding the abstract block set. For this form of metadata (but not the form shown at 133 of FIG. 13). This may
15   not occur until the applicable backup segment is copied to the medium storing the abstract block set because, until that time, the order of appearance for the applicable physical backup segment is not known.

The cited text of the '706 fails even to suggest *transferring* context

20   information. Therefore, the '339 patent, alone or in combination with the '706 patent, cannot render obvious claim 11.

Caven & Aghevli LLC

15

2003023532-1

CONCLUSION

Claims 1-18 are in believed to be in condition for allowance.

Applicant respectfully requests reconsideration and prompt issuance of the

present application. Should any issue remain that prevents immediate

5   issuance of the application, the Examiner is encouraged to contact the

undersigned attorney to discuss the unresolved issue.

Respectfully Submitted,
Jed W. Caven
10   Caven & Aghevli LLC
9249 S. Broadway Blvd. #200-201
Highlands Ranch, CO 80129

Dated: March 8, 2005

15   Jed W. Caven
Caven & Aghevli LLC
Reg. No. 40,551
(720) 841-9544

2003023532-1